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(54) Method and apparatus for fine motion estimation in digital video pictures

(57) The invention relates to a method for fine motion estimation in digital video signals. The vector search procedure is based on reconstructed YC_bC_r pixel data received via a data bus (Z4) from the encoder prediction loop.

It is also proposed an architecture for an apparatus for fine motion estimation of digital video signals. In this architecture a feedback loop (390) for the block matching array (330) is included, which allows multiple use of the same data for the vector search procedure without accessing an external memory device (231) several times.

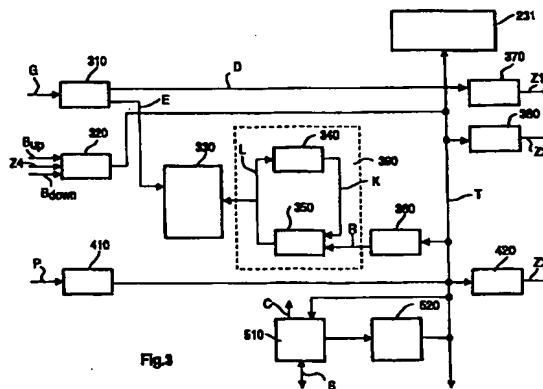


Fig.3



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EUROPEAN SEARCH REPORT

Application Number
EP 96 11 8864

DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)						
X	IEEE TRANSACTIONS ON SIGNAL PROCESSING, vol. 41, no. 2, 1 February 1993, pages 889-900, XP000346029 YEU-SHEN JEHNG ET AL: "AN EFFICIENT AND SIMPLE VLSI TREE ARCHITECTURE FOR MOTION ESTIMATION ALGORITHMS" * figures 1,3 *	1,2	H04N5/14 H04N7/36						
Y	IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol. 40, no. 3, pages 234-241, XP000471179 JECCHANG JEONG ET AL: "DEVELOPMENT OF AN EXPERIMENTAL FULL-DIGITAL HDTV SYSTEM: ALGORITHM AND IMPLEMENTATION" * figure 1 *	1,2							
Y	MULTIDIMENSIONAL SIGNAL PROCESSING, SAN FRANCISCO, MAR. 23 - 26, 1992, vol. 3, 23 March 1992, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, pages 465-468, XP000378969 SIU-LEONG IU: "COMPARISION OF MOTION COMPENSATION USING DIFFERENT DEGREES OF SUB- PIXEL ACCURACY FOR INTERFIELD/INTERFRAME HYBRID CODING OF HDTV IMAGE SEQUENCES" * figure 1 *	1,2							
			TECHNICAL FIELDS SEARCHED (Int.Cl.6) H04N						
		-/-							
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>16 May 1997</td> <td>Dippel, U</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	16 May 1997	Dippel, U
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THE HAGUE	16 May 1997	Dippel, U							
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EUROPEAN SEARCH REPORT

Application Number

EP 96 11 8864

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X	EP 0 574 192 A (RCA THOMSON LICENSING CORP) 15 December 1993 * column 9, line 23 - line 55 * * figures 4A, 5D *	3			
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A	EP 0 554 586 A (PHILIPS NV ;PHILIPS SPA (IT)) 11 August 1993 * column 2, line 52 - column 5, line 52 * * claims 2,3 * * figures 3,4 *	3,6	TECHNICAL FIELDS SEARCHED (Int.Cl6)		
A	SIGNAL PROCESSING IMAGE COMMUNICATION., vol. 6, no. 3, June 1994, AMSTERDAM NL, pages 229-239, XP000451927 GERARD DE HAAN: "Sub-pixel motion estimation with 3-D recursive search block-matching" * figure 3 *	3,6,7			
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Place of search	Date of completion of the search	Examiner			
THE HAGUE	16 May 1997	Dippel, U			
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